

KALMANOVA-GROSHEVA, L.M.

~~Local anesthesia in therapeutic abortion.~~ Sov.med. 22 no.4:127-128
Ap '58 (MIRA 11:7)

1. Iz kafedry akusherstva i ginekologii (zav. - prof. I.F. Zhordaniya)
lechebnogo fakul'teta II Moskovskog meditsinskogo instituta imeni
N.I. Pirogova i gorodskoy bol'nitsy No.40 Moskvy (glavnyy vrach
Ya. I. Shipotovskiy).

(ABORTION, THERAPEUTIC

local anesth. (Rus))

(ANESTHESIA, LOCAL

in ther. abortion (Rus))

KALMANOVA-GROSHEVA, L.M.

Cytological investigations of bloody uterine discharges during menstruation and in hemorrhagic metropathy. Vop.okh.mat. 1 det. 4
no.4:58-60 J1-Ag '59. (MIRA 12:12)

1. Iz ginekologicheskogo otdeleniya (zav. - L.M. Kalmanova-Grosheva)
gorodskoy bol'nitsy No.40 Moskvy (glavnyy vrach Ya.S. Shipotovskiy).
(HEMORRHAGE, UTERINE) (MENSTRUATION)

KALMANOVA-GROSHEVA, L.M., kand.med.nauk

Endometriosis in a cicatrix of the anterior abdominal wall after a cesarean section. Vop. okh. mat. i det. 7 no.3:60-62 Mr '62.

(MIRA 15:5)

1. Iz ginekologicheskoy kliniki (zav. - prof. I.S.Krayevskaya)
Nauchno-issledovatel'skogo onkologicheskogo instituta imeni P.A.
Gertsena (dir. - prof. A.N.Novikov).

(CESAREAN SECTION)

(ENDOMETRIOSIS)

KALMANOVICH, ~~KALMANOVICH~~

RUMANIA / Chemical Technology. Processing of Naturally H
Deposited Solid Fuels.

Abs Jour: Ref Zhur-Khimiya, No 22, 1958, 75204.

Author : Zorio, Kalmanovich.

Inst : Not given.

Title : Utilization of Rumanian Coals as Ion Exchange
Materials.

Orig Pub: Rev. chim., 1957, 8, No 12, 760-762.

Abstract: A report is given on the experiments that were
made on raw and sulfonated coal, from Kapen',
Ilien' and Vyrgich. PNP, which were used as
ion exchange materials for water purification.
In addition to that, a sulfonated coal was used
for the purification of juices in the sugar in-
dustry.

Card 1/1

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000620130001-8

KALMANOVICH, A.M. [Kalmanovych, A.M.]

Semigroups of partial endomorphisms of a graph. Dop. AN

URSR no.2:147-150 '65.

(MIRA 18:2)

1. Komunarskiy gornometallurgicheskiy institut.

KAL'MANOVICH, B. L.

"Water and Food Factors in the Epidemiology of Typhoid Fever in the RSFSR During the Second World War." Sub 7 Apr 47. First Moscow Order of Lenin Medical Inst

Dissertations presented for degrees in science and engineering in Moscow in 1947

SO: Sum No. 457, 18 Apr 55

KAL'MANOVICH, B. L.

Kal'manovich, B. L. - "Prevention of contagious childhood diseases,"
Doshkol. vospitaniye, 1949, No. 3, p. 33-37

SQ: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 14, 1949).

KAL'MANOVICH, B.L.

7891. KAL'MANOVICH, B. L. Metodicheskiye ukazaniya k prepodavaniyu epidemiologii v meditsinskikh uchilishchakh. m., medgiz, 1954. 46s. 20 sm. 4.000 EKZ. 1R. 20 K.-- (55-3761) P

616.9-036(077)

SO: Knizhuaya Letopis', Vol. 7, 1955

KAL'MANOVICH, B.L.; BLYUMEL', N.F.; GIRSHIK, B.I.; IRTLACH, B.I.

Effectiveness of immunization against dysentery in school children.
Pediatriia no.4:30-32 J1-Ag '54. (MLRA 7:10)

1. Iz kafedry epidemiologii (zav. prof. L.Ya.Kata-Chernokhvostova)
I Moskovskogo ordena Lenina meditsinskogo instituta i rayonnykh
sanitarno-epidemiologicheskikh stantsiy
(DYSENTERY, BACILLARY, in infant and child,
vacc., results in school child.)
(VACCINES AND VACCINATION,
dysentery, bacillary, results in school child.)

KAL'MANOVICH, B.L.

KAL'MANOVICH, B.L. (Moskva)

Textbook on disinfection edited by V.I.Vashkov and B.I.Gandel'sman,
published 1952. Reviewed by B.L.Kal'manovich. Fel'd. i akush. no.
6:62-63 Je '54. (MLRA 7:7)
(DISINFECTION AND DISINFECTANTS)

KAL'MANOVICH, B.L.

~~CONFIDENTIAL~~
"Infectious diseases". I.A. Minkevich. Reviewed by B.L.
Kal'manovich. Sov. med. 20 no.3:94-95 Mr. '56

(MIRA 9:6)

(MINKEVICH, I.A.)
(COMMUNICABLE DISEASES)

KAL'MANOVICH, B.L.

KAL'MANOVICH, B.L.

"Textbook in epidemiology." Reviewed by B.L.Kal'manovich. Zhur.
mikrobiol.epid. i immun. 28 no.10:148-149 0 '57. (MIRA 10:12)
(EPIDEMIOLOGY)

ESTRIN, M.I., kand.tekhn.nauk; KAL'MANOVICH, E.L., kand.tekhn.nauk

Investigating basic parameters of concrete vibrators used in
concrete finishing machines. Sbor.trud.VNIISTroidormash.Lenfil.
no.16:68-77 '57. (MIRA 12:7)
(Road machinery) (Pavements, Concrete)

KAL'MANOVICH, F. L.

"Effect of Decreased Content of Protein in Food Rations on the
Growth of Rats and on the Content of Protein in Their Organs."
Sub 21 Juh 51, Acad Med Sci USSR.

Dissertations presented for science and engineering degrees in
Moscow during 1951.

SO: Sum. No. 480, 9 May 55

L 28978-66 EWT(1)/EWT(m)/EWP(j)/T SCTB NW/DD/RM

ACC NR: AP6019161

SOURCE CODE: UR/0240/69/000/005/0074/0175

AUTHOR: Kal'manovich, E. L. (Candidate of biological sciences)

ORG: Institute of the Hygiene of Children and Adolescents, AMN SSER, Moscow (Institute gigiyeny detey i podrostkov AMN SSSR)

TITLE: Experience in using the simplified TC-5A gas analyzer to determine low concentrations of carbon dioxide in the air

SOURCE: Gigiyena i sanitariya, no. 5, 1965, 74-75

TOPIC TAGS: gas analyzer, carbon dioxide, carbon monoxide, gas analysis/TC-5A gas analyzer

ABSTRACT: The author describes how he modified for CO₂ analysis a simplified gas analyzer originally designed by D. P. Sendrikhina in 1951 for the analysis of hydrocarbons and carbon monoxide. The accuracy of the new modification was checked with reference to the Reberg micrometer, using 30 samples. In 17 cases the results were the same and in 13 the difference was 0.002 vol.%. A single determination in this gas analyzer takes 15-17 min compared with 40-45 min required when using the Reberg micrometer. The modified gas analyzer is suitable for mass analyses of air under laboratory and, particularly, expedition conditions. If the need arises, the apparatus can be altered back to its standard form for the analysis of hydrocarbons and carbon monoxide. Thus the difficulties involved when using the Reberg micrometer for mass analyses of CO₂ in the air are in this case avoided. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 07, 04 / SUBM DATE: 04Dec63 / ORIG REF: 003

Card 1/1 BLS

KALMANOVICH, I.Z.

Quantitative determination of alloy components by a "stylo-
scopic" test transfer. Izv. AN SSSR Ser.fiz.18 no.2:275-
276 Mr-Ap '54. (MLRA 7:11)

1. Kaluzhskiy turbinnyy zavod.
(Alloys--Spectra)

USSR/Chemistry - Quantitative analysis

Card 1/1 Pub. 43 - 53/97

Authors : Kalmanovich, I. Z.

Title : Quantitative determination of elements in alloys on a styloscope by the
 method of sample transfer

Periodical : Izv. AN SSSR. Ser. fiz. 18/2, 275-276, Mar-Apr 1954

Abstract : The development of a method for quantitative determination of elements on
 a styloscope by transferring the sample into an AC-arc, is reported.
 Determination of Cr in steel was carried out according to Cr spectral
 lines 5208.44 Å. Mn was determined according to the Mn 4825.51 Å line.
 Zn was determined according to Zn 4722.16 Å line.

Institution : The Turbine Plant, Kaluzha

Submitted :

KALMANOVICH, K.M.; DUBINSKIY, M.B.

Acute appendicitis and labor. Akush. i gin. 3/4 no.3:108-109 My-Je '58.
(MIRA 11:6)

1. Iz akusherskoy kliniki (rukovoditel' - prof. R.L.Shub) i khirurgi-
cheskoy kliniki (rukovoditel' - prof. A.P.Lepukaln) 1-y gorodskoy
klinicheskoy bol'nitsy (glavnyy vrach E.V.Cherepovich), Riga.

(LABOR, compl.
appendicitis, acute (Rus))
(APPENDICITIS, in pregn.
acute, in labor (Rus))

KAMALOV, K.; VISHNIYAKOVA, A.A.; IVANOV, V.P.; NABIYEV, M.N.; SALOVSKIY, K.D.;
ROZENOVICH, V.A.; KALMANOVICH, L.A.

Development of the production technology for ammoniated super-
phosphate on the basis of a granulation equipment. Uzb.khim.
zhur. 9 no.1:58-61 '65. (MIRA 18:6)

1. Institut khimii AN Uzbekskoy SSR.

PELEVIN, L.; NAYANZIN, I., inzh.; BATURIN, N.; RBY, Yu., technolog (g.Khar'kov);
TSIPERFIN, I.; KARLENKOV, B., aktivist; ~~KALIMANOVICH, M.~~;
SERGIYENYA, K., normirovshchik; IGNATOV, L. (g.Tashkent)

From readers' letters. Izobr.i rats. no.6:38-40 Ja '59.
(MIRA 12:9)

1. Nachal'nik proizvodstvenno-tekhnicheskogo otdela neftepromy-
slovogo upravleniya "Tuy-mazyneft'", g.Oktyabr'skiy, BashASSR (for
Pelevin). 2. Proizvodstvenno-tekhnicheskoy otdel neftepromyslovogo
upravleniya "Tuy-mazyneft'", g.Oktyabr'skiy, BashASSR (for Nayanzin).
3. Starshiy inzhener tekhnicheskogo otdela parovozno-vagonnogo
zavoda, g.Ulan-Ude (for Baturin). 4. Nachal'nik Byuro sodeystviya
ratsionalizatsii i izobretatel'stvu Odesskogo zavoda zapasnykh
chastoy, g.Odessa (for TSiperfin). 5. Nachal'nik Byuro sodeystviya
ratsionalizatsii i izobretatel'stvu Penzenskogo dizel'nogo zavoda,
g.Penza (for Karlenkov). 6. Nikolayevskiy oblastnoy novet Vsoodnyuz-
nogo obshchestva izobretateley i ratsionalizatorov, g.Nikolayev (for
Kal'manovich). 7. Khar'kovskiy traktorny zavod, g.Khar'kov (for
Sergiyenya).

(Efficiency, Industrial)

KISELEV, N. (Kiyev); OL'SHANOV, Ye.; (Khabarovsk); RYABOV, M. (Lipetsk);
KAL'MANOVICH, M., aktivist; ROMANOV, V., inzh. (g. Izhevsk);
VOSTRYAKOV, I.

From letters. Izobr. i rats. no. 12:36-37 D '59.

(MIRA 13:8)

1. Starshiy inzhener Ukrainskogo respublikanskogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Kiselev).
2. Sekretar' Khabarovskogo krayevogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Ol'shanov).
3. Predsedatel' Lipetskogo oblastnogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Ryabov).
4. Oblastnoy sovets Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov g. Nikolayev (for Ka'manovich).
5. Planovo-tekhniko-ekonomicheskii otdel Izhevskogo otdeleniya Kazanskoy zheleznoy dorogi (for Romanov).
6. Starshiy inzhener Byuro sodeystviya ratsionalizatsii i izobretatel'stvu Sredneural'skogo medeplavil'nogo zavoda, g. Revda.
(Technological innovations)

KAL'MANOVICH, M.A., inzh.; TARANCHEV, V.V., inzh.

Experience in adjusting and operating high-frequency protection
channels on a 400 kv. power transmission line. Trudy VNIIE
no.7:226-243 '58. (MIRA 16:12)

...L... ..

measures for the improvement and development of stock breeding. (in arab.)
Partizani ian Var (1, 1975. 31 p.

Yudin SP190.RC13

KAL'MANOVICH, M.I.

People of creative work. Izobr.v SSSR 2 no.11:46-48 M '57.
(MIRA 10:10)
(Nikolaev (Nikolaev Province)--Efficiency, Industrial)

KAL'MANOVICH, M.I., instruktor

Mass participation is the pledge of success. Izobr. i rats.
no.9:43 S '58. (MIRA 11:10)

1. Nikolayevskiy oblastnoy Sovet Vsesoyuznogo obshchestva
izobretateley i racionalizatorov.
(Nikolayev Province--Efficiency, Industrial)

KOROL'KOV, I.I.; KAL'MANOVICH, S.L.; VITEL'S, V.L.; EFROS, I.N.

Introducing automatic control for the stabilization of hydrolysis processes. Gidroliz.i lesokhim.prom. 13 no.4: 11-14 '60. (MIRA 13:7)

1. Nauchno-issledovatel'skiy institut gidroliznoy i sul'fitno-spirtovoy promyshlennosti (for Kal'manovich). 2. Segazhskiy gidroliznyy zavod (for Efros).
(Segazha--Hydrolysis) (Automatic control)

NIKONOROV, N.M.; MARSOV, A.V.; YETUSAKOV, P.Ye.; KAL'MANOVICH,
S.L., kand. tekhn. nauk, red.; KUREPINA, G.N., red.iad-va;
SPERANSKAYA, O.V., tekhn. red.

[Handbook on laboratory weighing instruments and weights;
Spravochnik po laboratornym vesam i giriam. Moskva,
Mashgiz, 1963. 191 p. (MIRA 16:12)
(Laboratories—Equipment and supplies)
(Weights and measures)

KAL'MANOVICH, S.L., kand.tekhn.nauk, dotsent

Regulating the depth of the surface layer and residual technical stresses for increasing the reliability of parts. Izv.vys. ucheb. zav ; mashinostr. no. 12:210-220 '63. (MIRA 17:9)

1. Leningradskiy politekhnicheskij institut.

25(6)

SOV/135-59-3-21/24

AUTHORS: Strizhevskiy, I.I., Candidate of Technical Sciences, and
Kal'manovich, S.P., Engineer

TITLE: A New Standard for Water Seals, and Methods of Testing Them
(Novyy standart na vodyanyye zatvory i sposoby ikh is-
pytaniy)

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 3, pp 40-43 (USSR)

ABSTRACT: Information is presented on the new state standard "GOST
8766-58" for the safety seals of acetylene generators. It
is stated that industrial plants have been producing their
own safety seals, and not always in conformity with the safety
rules. There were no standard regulations for tests of the
seals. The new standard includes such test rules. The ar-
ticle includes detailed information on the design and work-
ing principles of the water seals, the principles of the

Card 1/2

SOV/135-59-3-21/24

A New Standard for Water Seals, and Methods of Testing Them

tests, and a detailed and illustrated description of a test installation (Fig. p 42). The new designs must now be approved by VNIIAVTOGEN. There is 1 diagram and 1 table.

ASSOCIATION: VNIIAVTOGEN

Card 2/2

SOV/135-59-11-13/26

18(5)

AUTHORS: Strizhevskiy, I.I., Candidate of Technical Sciences, and Kal'manovich, S.P., Engineer

TITLE: Welded Acetylene Tanks

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 11, pp 31-33 (USSR)

ABSTRACT: For transportation and storage of dissolved acetylene, balloons of 40 l capacity, Type 40-100 according to GOST 949-57, are used. The shells of these balloons are manufactured from steel seamless tubes 219 mm in diameter with a wall thickness of at least 5.2 mm. The standardized balloon weight is 43.5 kg; however, at the present, the plants manufacture only such balloons which have a wall thickness of 7-8 mm, and sometimes even 8.5 mm. In this case, the weight of a balloon amounts to 63.5 kg. In 1957-58, the VNIIAVTOGEN developed a new welded light weight construction for acetylene balloons of a 60 l capacity. It received the name BAS-1-58 (Fig 1); its pertinent specifications are given in Table 1. There are 1 graph, 2 tables, 1 diagram and 1 photograph.

Card 1/1

ASSOCIATION: VNIIAVTOGEN

STRIZHEVSKIY, I.I., kand.khimicheskikh nauk; KAL'MANOVICH, S.P., inzh.

Determination of the granulometric characteristic and specific
surface of calcium carbide pieces of various size. Trudy VNI-
Avtogen no.6;114-133 '60. (MIRA 13:8)
(Particle size determination)
(Calcium carbide)

STRIZHEVSKIY, I.I., kand.khimicheskikh nauk; KAL'MANOVICH, S.P., inzh.

Material balance of the carbide hydrolysis process in
"carbide to water"-type generators. Trudy VNIIAvtogen
no.7:148-166 '60. (MIRA 13:7)
(Acetylene generators)

KAL'MANOVICH, S.P., insh.

Investigating the effect of pressure in gas generators
on the "dry" hydrolysis of calcium carbide. Trudy VNIIAvtogen
no.7:167-176 '60. (MIRA 13:7)
(Acetylene generators)

STRIZHEVSKIY, I.I., kand.khimicheskikh nauk; KAL'MANOVICH, S.P., inzh.

Properties and thickening methods of carbide pulp. Trudy
VNIIAvtogen no.8:153-169 '62. (MIRA 15:6)
(Calcium carbide)

STRIZHEVSKIY, I.I., kand.khimicheskikh nauk; KAL'MANOVICH, S.P., inzh.

Dry fire barriers. Trudy VNIIAvtogen no.8:181-187 '62.
(MIRA 15:6)

(Acetylene—Pipelines) (Fires and fire prevention)

KAL'MANOVICH, S.P., inzh.; STRIZHEVSKIY, I.I., kand. khim. nauk;
Prinimala uchastiye: ZAYTSEVA, V.P., inzh.

Acetylene purification by liquid nitric acid. Trudy VNIIAVtogen
no.9:124-135 '63. (MIRA 16:12)

STRIZHEVSKIY, I.I., kand. khim. nauk; KAL'MANOVICH, S.P., inzh.

Automatic filling with acetone of acetylene cylinders. Trudy
VNIIAvtogaz no.11:131-139 '64. (MIRA 18:3)

YEKTOV, I.M.; ZARUYEV, V.M.; GUROV, S.A.; REYENKO, I.P.; V rabote
prinimali uchastiye : KALMANOVICH, Yu.R.; GRIGOR'YEV, F.N.;
KOSHELENKO, A.M.; LITVINENKO, Yu.P.; DMITRIYEV, V.D.;
POLYAKOV, V.V.; PETUSEKOV, Ye.S.; FIRSOV, P.V.

Rolling double bulb-bar shapes with longitudinal cutting in
the finishing mill. Stal' 20 no. 12:1113-1115 D 160.
(MIRA 13:12)

1. Stalinskiy metallurgicheskiy zavod i Donetskii politekhnicheskii
institut.
(Rolling (Metalwork))

KAL'MANOVICH, Z. M.

Sovremennye konstruktsii shtampov dlia kholodnoi shtampovki. Moskva,
Mashgiz, 1949, 254 p.

(Modern designs of dies for cold stamping.)

SO: Manufacturing and Mechanical Engineering in the Soviet Union,
Library of Congress, 1953.

KAL'MANOVICH, Z.Z., inzhener; MUSATOV, N.V., inzhener.

Expanding the use of VOM-2M combines in the mines of the Moscow basin.
Ugol' 28 no.6:30-32 Je '53. (MLBA 6:6)

(Moscow Basin--Coal-mining machinery)

KAL'MANOVICH, Z.Z., inzh.; GOLOBOROD'KO, I.P.

Developing a standardization for cutter-loaders used in stopping.
Ugol' 40 no.2:37-39 F '65. (MIRA 18:4)

1. Gosudarstvennyy proyektno-konstruktorskiy i eksperimental'nyy
institut ugol'nogo mashinostroyeniya (for Kal'manovich). 2. Dngipro-
uglemash (for Goloborod'ko).

L 17190-63

EPR/EWP(j)/EPF(c)/ENP(q)/EWI(m)/BDS/ES(s)-2 XETC/

ASD/SSD Ps-l/Pc-l/Pr-l/Pt-l/Pq-l RM/MW/WH
ACCESSION NR: AR3004190

s/0081/63/000/009/0458/0458

SOURCE: RZh. Khimiya, Abs. 9M139

AUTHOR: Kalmanovskaya, M. A.

TITLE: Dependence of the strength of glass plastics on the degree of drawing and glass fiber diameter

CITED SOURCE: Steklo. Byul. Gos. n.-i. in-ta stekla, no. 1(114), 1962, 36-40

TOPIC TAGS: glass plastic, glass fiber, drawing, strength, glass forming

TRANSLATION: Defects of inhomogeneity and cracks on the surface and in the volume of glass fiber (GF) depend on the rate of drawing and cooling (forming) of the GF, i.e. on the degree of drawing. An increase in the degree of drawing of GF has a positive influence on the strength of glass plastics even in the range of small GF diameters. In practice, in the production of glass plastics, it is advisable to use a fiber with $d \ 14-16 \ \mu$, with as large a degree of drawing as possible, i.e. drawn from spinnerets of the largest possible diameters at high rates. I. Mikhaylova.

DATE ACQ: 19Jun63
Card 1/1

SUB CODE: CH

ENCL: 00

LIBERMAN, A.D., kandidant tekhnicheskikh nauk; KALMANOVSKIY, D.I., inzhener.

Precast reinforced concrete schoolhouse roof. Biul.stroi.tekh.13
no.10:19-21 0 '56. (MIRA 10:1)
(Roofs) (Precast concrete construction)

KALMANOVSKIY, V.I.; KISELEV, A.V.; LEBEDEV, V.P.; SAVINOV, I.M.; SMIRNOV,
N.Ya.; FIKS, M.M.; SHCHERRAKOVA, K.D.

Gas chromatography in glass capillary columns with a chemically
modified surface. Zhur.fiz.khim. 35 no.6:1386-1388 Je '61.
(MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova i
Dzerzhinskiy filial opytно-konstruktorskogo byuro avtomatiki
Goskhimkomiteta.

(Gas chromatography)

ZHDANOV, S.P.; KALMANOVSKIY, V.I.; KISELEV, A.V.; FIKS, M.M.; YASHIN, Ya.I.

Use of porous glasses as adsorbents in gas chromatography.
Zhur.fiz.khim. 36 no.5:1118-1120 My '62. (MIRA 15:8)

1. Institut khimii silikatov AN SSSR; Opytno-konstruktorskoye
byuro avtomatiki Gosudarstvennogo komiteta khimicheskoy pro-
myshlennosti pri Sovete Ministrov SSSR, Dzerzhinskiy filial i
Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
khimicheskiy fakul'tet.

(Glass) (Adsorbents) (Gas chromatography)

BUROV, A.N.; KALMANOVSKIY, V.I.; FIKS, M.M.; YANSHIN, Ya.I.

Ionization methods for determining microimpurities in gases.
Trudy Kom.anal.khim. 13:247-256 '63. (MIRA 16:5)
(Ionization of gases) (Gas chromatography)

S/081/61/000/003/005/036
B144/B106

AUTHORS: Krylov, B. K., Kalmanovskiy, V. I.

TITLE: Technique for identifying the results of chromatographic analysis using a mass spectrometer

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1963, 119, abstract 3G34 (Tr. po khimii i khim. tekhnol. (Gor'kiy), no.4, 1961, 747-752)

TEXT: The mass spectrometer MM 1305 (MI 1305) (RZhKhim, 1959, no. 5, 15686) was adapted for identifying chromatographically separated components of gaseous mixtures. Mass-spectrometric analysis was conducted by freezing out the fractions as well as by continuously admitting to the mass spectrometer the gases leaving the chromatographic column. In the first case components with a concentration of 0.5 - 1% in the initial mixture could be analyzed, in the second case those with up to 3% concentration. The volume of the sample introduced into the chromatograph was 10 - 30ml. The continuous admission of gases in viscous state was effected using a Cu capillary tube 15 cm in length and 0.3 mm in diameter, to the end of which a glass capillary 10 - 15 mm in length and 0.03 - 0.05 mm in diameter was attached.
Card 1/2

Technique for identifying the results ...

S/081/63/000/003/005/036
B144/1186

diameter was soldered. Electron patterns are given of the continuous change of the accelerating voltage in the mass spectrometer for the scanning of the mass spectra. The technique was checked on a mixture of C_3 and C_4 hydrocarbons. [Abstracter's note: Complete translation.]

Card 2/2

JOCHWEDS, B.; RAFALOWICZ, A.; KALMANOWICZ, A; DYKOWSKA, M.

Case of malignant hypertension with insignificant vascular changes. Polski tygod.lek. D no.28:938-940 11 July '55.

1. Z Oddz.Wew.:Kierownik doc. dr B. Hochweda.Warszawa, Litowska 5,
(HYPERTENSION, pathology,
vasc.)

JOCHWEDS, B.; KALMANOWICZ, A.

Late and very pronounced azotemia in myocardial infarction;
report of two cases. Polski tygod. lek. 11 no.11:505-508
12 Mar 56.

1. Z Oddz. Wewn. Centr. Szpitala MBP w Warszawie; ordynator: prof.
dr. B. Jochweds. Warszawa, ul. Litewska 5.

(NITROGEN, in blood,
excess in myocardial infarct. (Pol))

(BLOOD,
azotemia in myocardial infarct (Pol))

(MYOCARDIAL INFARCT, blood in,
azotemia (Pol))

Jochweds, B.; KALMANOWICZ, A.

Investigation on the effect of strophanthin on auriculo-ventricular conduction. Polski tygod. lek. 12 no.2:63-66
7 Jan 57.

1. (Z Oddziału Chorob Wewnętrznych Centralnego Szpitala MBP w Warszawie; ordynator: prof. dr. B. Jochweds). Adres: Warszawa, Litewska 5.

(STROPHANTHIN, eff.

on auric.-ventric. conduction (Pol))

(HEART, eff. of drugs on

strophanthin on auric.-ventric. conduction (Pol))

KALIMANOWICZ, ALFRED

JOCHWEDS, Benjamin; KALIMANOWICZ, Alfred; LEDER, S.

Problem of splenectomy in endocarditis lenta, with report of a case. Polski tygod. lek. 12 no.22:833-835 27 May 57.

1. Z Oddziału Chorób Wewnętrznych Centralnego Szpitala MBP;
ordynator; prof. B. Jachweda. Adres: Warszawa, ul. Litewska 5 m. 1.
(ENDOCARDITIS, SUBACUTE BACTERIAL, surgery,
splenectomy (Pol))
(SPLEEN, surgery,
exis. in subacute bact. endocarditis (Pol))

SHCHUKINA, M.N.; YERMOLAYEVA, V.G.; KALMANSON, A.E.

Free radicals formed as intermediate products in the oxidation of
pyridylthiazolylcarbinols and some other secondary carbinols. Dokl.
AN SSSR 158 no.2:436-439 S '64. (MIRA 17:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut im. S.Ordzhonikidze. Predstavleno akademikom I.L.Bunyansem.

BLUMENFELD, L.A.; KALMANSON, A.E.

BLUMENFELD, L.A.; KALMANSON, A.E.

Electronic paramagnetic resonance spectra of biological objects
[with summary in English]. Biofizika 2 no.5:552-565 '57.

(MIRA 10:11)

1. Otdeleniye biologicheskikh nauk AN SSSR, Moskva. Gruppya
chl-korr. AN SSSR N.I.Graebchenkova.

(RADIATION--PHYSIOLOGICAL EFFECT)

(SPECTRUM ANALYSIS)

(PROTEINS)

KALMANSON, A. E.

20-1-18/42

AUTHORS:

Blyumenfel'd, L. A., Kalmanson, A. E.,

TITLE:

The Spectra of the Paramagnetic Resonance of the Electrons in the Case of Irradiated Native and Denaturized Albumin Substances (Spektry elektronnogo paramagnitnogo rezonansa obluchennykh nativnykh i denaturirovannykh belkov)

PERIODICAL:

Doklady AN SSSR, 1957, Vol. 117, Nr 1, pp. 72-74 (USSR)

ABSTRACT:

First it is referred to a previous paper on the subject by an author of this paper (reference 1). According to experiments carried out previously in the deceleration of the fermentative process in the case of soft denaturation or in the case of exhausting the "substrata" no spectra of the paramagnetic resonance of the electrons are ascertained. This gives evidence of the fact that the effect observed is caused by non-paired electrons which belong to the albumin structure and not to the metal ions and other paramagnetic admixtures. The electrons in the gliding zone of the albumin molecule can also be obtained by different method, that is by means of a ionizing radiation. Therefore the authors investigated the spectra of the paramagnetic resonance of the electrons of several irradiated native and denaturized albumin preparations, amino acids and peptides. The irradiation took place by γ -rays of the Co^{60} with doses of $\sim 10^{-5}$

Card 1/3

The Spectra of the Paramagnetic Resonance of the Electrons in 20-1-18/42
the Case of Irradiated Native and Denaturized Albumin Substances.

ASSOCIATION: The Group of the Corresponding Member of the AN SSSR N.I. Grashchenkov at the Department for Biological Sciences of the AN SSSR (Gruppa dhlenn-korrespondenta AN SSSR N.I. Grashchenkova pri Otdelenii biologicheskikh nauk Akademii nauk SSSR)

PRESENTED: July 15, 1957 by A.F. Ioffe, Academician

SUBMITTED: July 13, 1957

AVAILABLE: Library of Congress

Card 3/3

BLYUMENFELD, I.A.; KALMANSON, E.A.

Electronic paramagnetic resonance spectra of biological objects;
effect of denaturation on electronic paramagnetic resonance spectra
of irradiated proteins [with summary in English]. Biofizika 3 no.1:
87-91 '58. (MIRA 11:2)

1. Otdeleniye biologicheskikh nauk AN SSSR, Moskva. Gruppy chlena-
korrespondenta AN SSSR N.I. Grashchenkova.

(NUCLEAR MAGNETIC RESONANCE) (PROTEINS)

(RADIATION--PHYSIOLOGICAL EFFECT)

(HEAT--PHYSIOLOGICAL EFFECT)

KALMANSON, A.E.; BENUMENFEL'D, L.A.

Electron paramagnetic resonance spectra of native and denatured
proteins, Biofizika 3 no.6:735 '58. (MIRA 12:1)

1. Laboratoriya anizotropnykh struktur AN SSSR, Moskva.

(PROTEINS,

spectra of paramagnetic electronic resonance of
native & denaturated proteins (Rus))

KATMANSON, A.E.

21(a); 27(0) PHASE I BOOK EXPLANATION 807/2008
International Conference on the Peaceful Uses of Atomic Energy. 2d, Geneva, 1958
Dobryi sovetskikh uchenykh; radiobiologiya i radiatsionnaya medicina
(Reports of Soviet Scientists; Radiobiology and Radiation Medicine)
Moscow, Izdatvo Gilev, 1959. 459 p. 8,000 copies printed. (Series:
Sovetskaya nauka, 1959. 459 p. 8,000 copies printed. (Series:
Vostochno-Moskovskaya konferentsiya po mirovomu ispol'zovaniyu atomoy energii.
Zamy, tom 5)

General Ed.: A.Y. Lebedevskiy, Corresponding Member, USSR Academy of Medical
Sciences; Ed.: L.S. Shirokovskiy, Tech. Ed.: Ye.I. Kuznetsov.

NOTE: This book is intended for physicians, scientists, and engineers
as well as for professors and students at courses where radiobiology and
radiation medicine are taught.

CONTENTS: This is Volume 5 of a 6-volume set of reports delivered by Soviet
scientists at the Second International Conference on the Peaceful Uses of
Atomic Energy, held on September 1-15, 1958, in Geneva. Volume 5 contains
24 reports edited by Candidates of Medical Sciences S.Y. Lavinitskiy and V.Y.
Bodor. The reports cover problems of the biological effects of ionizing
radiation, future consequences of radiation in all of life, genetic effects
of radiation, treatment of radiation sickness, uses of radionuclides in
diagnosis and biological research, uses of atomic energy for domestic
and economic purposes, soil absorption of uranium fission products,
their uptake by plants, and their storage in plants and foodstuffs.
References accompany each report.

Reports of Soviet Scientists (Cont.).

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BUTYAGIN, P.Yu.; BERLIN, A.A.; KALMANSON, A.E.; BLYUMENFEL'D, L.A.

Formation of macroradicals in the mechanical destruction of vitrified polymers. Vysokom. soed. 1 no.6:865-868 Js '59.

(MIRA 12:10)

1. laboratoriya anizotropnykh struktur AN SSSR.
(Polymers) (Radicals (Chemistry))

BERLIN, A.A.; BLYUMENFEL'D, I.A.; CHERKASHIN, M.I.; KALMANSON, A.E.;
SELISKAYA, O.G.

Polymers with conjugated bonds in the macromolecular chains. Part 2:
Paramagnetism and certain other properties of polyarylvinylenes.
Vysokom. soed. 1 no.9:1361-1363 S '59. (MIRA 13:3)

1. Laboratoriya anizotropnykh struktur AN SSSR.
(Polymers) (Vinylene compounds)

BLYUMENFEL'D, L.A.; BERLIN, A.A.; MATVEYEVA, N.G.; KALMANSON, A.E.

Polymers with conjugated bonds in the macromolecular chains.
Part 4: Some characteristics of polymeric compounds having
different atoms in the chain of conjugation. Vysokom.sped. 1
no.11:1647-1651 N '59. (MIRA 13:5)

1. Laboratoriya anizotropnykh struktur AN SSSR.
(Polymers)

SHEN PEI-GEN' [Sheng P'ei-ken]; BLYUMENFEL'D, L.A.; KALMANSON, A.E.; PASYUNSKIY, A.G.

Electron paramagnetic resonance spectra of biological objects.¹
Report No.3: Effect of ionizing radiations on nucleic compounds.
Biofizika, 4 no.3:263-274 '59. (MIRA 12:7)

1. Laboratoriya anizotropnykh struktur AN SSSR, Moskva, i Institut
biokhimi im. A.N. Bakha AN SSSR, Moskva.

(NUCLEIC ACIDS,

eff. of radiations on electric paramagnetic resonance
spectra (Rus))

(RADIATIONS, eff.

on nucleic acid electric paramagnetic resonance spectra
(Rus))

24(0)

AUTHORS:

Blyumenfel'd, L. A., Kalmanson, A. E., SOV/20-124-5-52/62
Sheng P'ei-zen

TITLE:

On the Characteristic Features of the Electron Structure of
Nucleic Acids and Their Complexes With Proteins (Ob oso-
bennostyakh elektronnoy struktury nukleinovyykh kislot i ikh
kompleksov s belkami)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 5, pp 1144-1146
(USSR)

ABSTRACT:

The authors continue their investigation of the spectra of
electronic paramagnetic resonance (EPR) of unpaired electrons
which can be observed in biological objects in the course of
fermentative reactions and in consequence of γ irradiation
(Refs 1-5). In the present paper a new class of biological
objects was used for this purpose. In the EPR spectra of
ribonucleic acid (RNA) and desoxyribonucleic acid (DNA) EPR
lines of large width and integral intensity were observed.
Badly depolymerized preparations (of the Schwartz works) gave
no signal. The results obtained show that in native nucleic
acids and especially in their complexes with proteins huge
amounts of unpaired electrons strongly interacting with

Card 1/3

On the Characteristic Features of the Electron
Structure of Nucleic Acids and Their Complexes With Proteins

SOV/20-124-5-52/62

each other are present at normal temperatures. Their number lags only little behind that of free electrons in metals. This electron cloud is bound to give completely new properties to such structures. It must be taken into consideration that in this case all similarities with metals, ferromagnetics, and antiferromagnetics have to be regarded as somewhat limited. This is an effect which is localized within each macromolecule. The EPR lines recall as to their shape the spectra of conductivity electrons in metals. Apparently there exists no Fermi level in the case mentioned and all unpaired electrons participate in magnetization. This is apparently a completely new phenomenon. It is impossible to predict the physical and chemical properties of such systems because of the lack of similarities. The fact itself that a huge cloud of unpaired electrons is observed in polymeric molecules which, on the whole, contain only C, N, H, and P atoms is most astonishing and cannot yet be explained. The authors are convinced that the phenomenon they discovered plays an important part in the specific properties of the biological structures (directed synthesis, inheritance of hereditary characteristics,

Card 2/3

On the Characteristic Features of the Electron SOV/20-124-5-52/62
Structure of Nucleic Acids and Their Complexes With Proteins

synthesis of immune-specific proteins, memory)(Refs 6,7).
N. N. Semenov, Academician, and V. V. Voyevodskiy, Corresponding Member, AS USSR took part in the discussion of the results. There are 2 figures and 7 references, 5 of which are Soviet.

ASSOCIATION: Laboratoriya anizotropnykh struktur Akademii nauk SSSR
 (Laboratory for Anisotropic Structures of the Academy of
 Sciences, USSR)

PRESENTED: January 28, 1959, by N. N. Semenov, Academician

SUBMITTED: January 27, 1959

Card 3/3

BLYUMENFEL'D, L.A.; BERLIN, A.A.; SLINKIN, A.A.; KAIMANSON, A.H.

New magnetic properties of macromolecular compounds having conjugated double bonds. Zhur. strukt. khim. 1 no.1:103-108 My-Je '60.
(MIRA 13:8)

1. Institut khimicheskoy fiziki AN SSSR.
(Macromolecular compounds--Magnetic properties)

83702

S/190/60/002/006/007/012
B015/B064

11.2210

AUTHORS:

Yegorova, Z. S., Malinskiy, Yu. M., Karpov, V. L.,
Kalmanson, A. E., Blyumenfel'd, L. A.

TITLE:

Chemical Changes of Polyvinylchloride Under the Influence
of Ionizing Radiations

PERIODICAL:

Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 6,
pp. 891-898

TEXT: The present paper investigates the dependence with time of the color change of PVC irradiated or non-irradiated under different conditions. The structural changes brought about by irradiation were also investigated. PVC powder samples and films (40, 180, and 200 μ thick) were irradiated at 293°K and 77°K in vacuum (approximately 10^{-4} torr), and stored in vacuum or in the air. Irradiation was made with fast neutrons with an energy of 200 kev, with a current density of $0.6 \mu \text{ a/cm}^2$ being applied to the samples provided for determining the absorption spectra (on the C Φ -4⁹ (SF-4) spectrometer) and paramagnetic electron resonance, and for determining the infrared spectra $1.2 \mu \text{ a/cm}^2$. An

Card 1/3

83702

S/190/60/002/006/007/012
B015/B064Chemical Changes of Polyvinylchloride Under
the Influence of Ionizing Radiations

electron accelerator with extracted beam was used as electron source. L. A. Vasil'yev irradiated the samples. In the infrared spectrum of the non-irradiated PVC (Fig. 1) a strong absorption band lies at 1256 cm^{-1} for the $-\text{CHCl}-$ group (Ref. 8), at 1428 cm^{-1} for the deformation oscillations of the methylene group (Ref. 9), and at 1330 cm^{-1} for the CH group (Ref. 9), at 1097 cm^{-1} for the C-C bond of the carbon chain, at 960 cm^{-1} for the methylene group and the C-C bond of the carbon skeleton, as well as at 698 cm^{-1} for the C-Cl bond. The intensity of the 1256 cm^{-1} and 698 cm^{-1} band is reduced in the spectrum of PVC irradiated in vacuum at room temperature for 3 hours which indicates a reduction of the chlorine content, as well as of the 1428 cm^{-1} and 960 cm^{-1} indicating a reduction in the amount of methylene groups. In this connection conjugate double bonds are formed under the separation of HCl (new band in the range of $1720\text{--}1530\text{ cm}^{-1}$). The further results obtained by spectral analyses and paramagnetic electron resonance indicate that the color change of PVC is due to processes occurring under the participation of radicals. By the method of the paramagnetic electron resonance the concentration of the radicals was found to decrease with time. In vacuum, this decrease is apparently due to a recombination of the radicals,

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83702

Chemical Changes of Polyvinylchloride Under
the Influence of Ionizing Radiations

S/190/60/002/006/007/012
B015/B064

and in the presence of air oxygen to a reaction of the latter with the free radicals under the formation of peroxide radicals. The vanishing of the free radicals is accelerated on heating, with chromophores (very likely with polyene character) being formed, intensivating the color of PVC. The infrared spectra were recorded with a device of the firm Khil'ger, model 209. There are 7 figures and 11 references: 5 Soviet, 5 US, and 1 French.

ASSOCIATION: Fiziko-khimicheskii institut im. L. Ya. Karpov (Physico-chemical Institute imeni L. Ya. Karpov). Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics of the AS USSR)

SUBMITTED: February 22, 1960

Card 3/3

SHEN PEY-GEN' [Shêng P'ei-Kên]; BLYUMENFEL'D, L.A.; KALMANSON, A.E.

Effect of denaturation and complex formation with proteins on
the magnetic properties of nucleic acids. Biofizika 5 no. 6:645-
654 '60. (MIRA 13:10)

1. Institut khimicheskoy fiziki AN SSSR, Moskva i Institut
biokhimii im. A.N. Bakha AN SSSR, Moskva.
(NUCLEIC ACIDS—MAGNETIC PROPERTIES)

S/051/60/009/006/014/018
E201/E191

AUTHORS: Chernyakovskiy, F.P., Kalmanson, A.E., and
Blyumenfel'd, I.A.

TITLE: Electron Paramagnetic Resonance in Crystals of
Triphenylmethane Dyes ✓

PERIODICAL: Optika i spektroskopiya, 1960, Vol.9, No.6, pp 786-787

TEXT: The author recorded the electron spin resonance spectra of crystal violet, basic brilliant green, malachite green, fuchsin (basic and acidic forms), fluorescein (uranin), rhodamines, thymol- and phenolphthaleins, indigo carmine and Congo red. With the exception of colourless phthaleins, coloured potassium thymolphthalein and malachite green, all the spectra were sharp singlets without hyperfine structure. Examples of such singlets are given in a figure on p. 787, where curve a represents the spectrum of crystal violet and curve b represents basic brilliant green. Experiments with water--alcohol solutions of indigo carmine and crystal violet showed that the electron spin resonance signal disappeared on dissolution and reappeared on drying. There are 1 figure and 5 Soviet references. ✓

SUBMITTED: June 6, 1960
Card 1/1

KALMANSON, A.

Cell investigation by radar. Znan.sila 35 no.1:20-24
Ja '60. (MIRA 13:5)
(Biophysics)

KALMANSON, A.E.; LIPCHINA, L.P.; CHETVERIKOV, A.G.

Electron paramagnetic resonance study of the interaction of tumor and normal cells with semiquinone ion radicals originating from the inhibitors of free-radical processes. Biofizika 6 no.4:410-423 '61.
(MIRA 14:7)

1. Institut khimicheskoy fiziki AN SSSR.
(CANCER) (PARAMAGNETIC RESONANCE AND RELAXATION)
(QUINONES)

SHEN PEY-GEN'; BLYUMENFEL'D, L.A.; KALMANSON, A.E.; PASYNSKIY, A.G.

Spectra of electronic paramagnetic resonance of biological objects. Part 4: Effect of ionizing radiations on chemically modified and denatured nucleic acid derivatives. Biofizika 6 no.5:534-547 '61. (MIRA 15:3)

1. Institut khimicheskoy fiziki AN SSSR, Moskva i Institut biokhimii imeni A.N. Bakha AN SSSR, Moskva.

(NUCLEIC ACIDS--SPECTRA)

(RADIATION--PHYSIOLOGICAL EFFECT)

(PARAMAGNETIC RESONANCE AND RELAXATION)

BLYUMENFEL'D, L.A.; BENDERSKIY, V.A.; KALMANSON, A.E.

Possibility of various interpretations of anomalous magnetic properties of macromolecular compounds. *Biofizika* 6 no.6:631-637 '61. (MIRA 15:1)

1. Institut khimicheskoy fiziki AN SSSR, Moskva.
(MACROMOLECULAR COMPOUNDS—MAGNETIC PROPERTIES)

YELKHOVSKAYA, Ye.S.; KALMANSON, A.E.; LIPCHINA, L.P.; TVERITINOV, V.N.;
CHETVERIKOV, A.G.

Difference in the sensitivity to propl gallate in tissues of hepatoma
and normal liver. Dokl. AN SSSR 139 no.4:996-998 Ag '61. (MIRA 14:7)

1. Institut khimicheskoy fiziki AN SSSR i Moskovskiy gosudarstvennyy
universitet im. M.V. Lomonosova. Predstavleno akademikom V.N.
Kondrat'yevym.

(GALLIC ACID) (LIVER--TUMORS)

KALINSON, A.E.; LIFCHIK, L.P.; CICHVIRYEV, A.G.

Difference in the sensitivity to propylgallate in proliferating and nonproliferating tissues. Dokl. AN SSSR 141 no.1:230-232 N '61. (MIRA 14:11)

1. Institut Khimicheskoy fiziki AN SSSR. Predstavleno akademikom V.N.Kondrat'yevym.

(Gallic acid)
(Oxidation, Physiological)
(Radicals(Chemistry))

KALMANSON, A. E.

32348

S/190/62/004/001/010/020
B101/B110

54600 1304

AUTHORS: Yegorova, Z. S., Malinskiy, Yu. M., Karpov, V. L., Kalmanson, A. E., Blyumenfel'd, L. A.

TITLE: Kinetics of disappearance of free radicals in irradiated polyvinyl chloride

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 1, 1962, 64 - 65

TEXT: The authors studied the decrease of concentration of free radicals in irradiated polyvinyl chloride in vacuo at 70 - 100°C by means of epr. X

Degassed polyvinyl chloride powder was irradiated with 200-kev electrons ($0.6 \mu\text{A}/\text{cm}^2$) for 10 min in vacuo (about 10^{-4} mm Hg) at 77° K. The epr signal was recorded by the apparatus of A. G. Semenov, N. N. Bubnov (Pri-bory i tekhnika eksperimenta, 1, 92, 1959) and compared with that of the standard diphenyl picryl hydrazyl.

Card 145

KALMANSON, A. E.

Dissertation defended in the Institute of Biochemistry imeni A.N.
Bakh for the academic degree of Candidate of Biological Sciences: 1962

"Electronic Paramagnetic Resonance Investigation of Several Free-
Radical States in Biological Objects."

Vestnik Akad Nauk No. 4, 1963, pp. 119-145

ACCESSION NR: AT4008633

8/3039/63/000/000/0045/0052

AUTHOR: Blyumenfel'd, L. A. ; Kalmanson, A. E.

TITLE: Study of radiation and chemical effects on biological materials by the electron paramagnetic resonance method

SOURCE: Pervichny*ye i nachal'ny*yo protsessy* biologicheskogo deystviya radiatsii. Moscow, 1963, 45-52

TOPIC TAGS: radiation effect, chemical effect, free radical, ionizing radiation, biological structure, irradiated amino acid, irradiated protein, electron paramagnetic resonance spectrum, gamma radiation, nucleoprotein, nucleic acid, EPR spectrum, EPR method, deoxyribonucleic acid, DNA

ABSTRACT: Following an extensive review of the literature on the electron paramagnetic resonance (EPR) technique, the authors report that when crystalline amino acids in the dry state were irradiated with 10^6 - 10^7 r from a cobalt source, intensive EPR spectra were obtained, showing a characteristic pattern which depends on the amino acid structure. In most amino acids, 10^7 r caused the appearance of free radicals equivalent to about 10^{19}

Card 1/3

ACCESSION NR: AT4008633

paramagnetic units/g of amino acid. The effect was due primarily to interaction of unpaired electrons with protons and with nitrogen nuclei. However, in sulfur-containing amino acids, the g-factor was altered, due to localization of the unpaired electrons in the sulfur atom. Irradiation of native proteins or of lyophilized tissues containing up to 60-80% protein gave a completely different EPR spectrum, showing a reduction in the number of free radicals by a factor of 2-3 and lacking the resolution of the spectra of the component amino acids. The spectra obtained appeared as single narrow peaks without specific structure. Similar results were obtained when enzymes were frozen and lyophilized in the presence of substrate. Irradiation of nucleic acids, nucleoproteins, DNA, and of various complex nucleic acids also revealed formation of free radicals characteristic of the nucleoside structures. However, whereas irradiation of a nucleoside produced free radicals equivalent to 10^{18} - 10^{19} paramagnetic units, this intensity was reduced by a factor of 2-3 when irradiation was performed on high molecular weight nucleic acids. This is considered important, since radiation damage to nucleic acid molecules is 10-50 times higher in high-molecular-weight polynucleotides than in low-molecular-weight compounds. A possible effect of added water on the electron paramagnetic resonance spectra of irradiated biological molecules is discussed.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR, Moscow (Institute of Chemical Physics AN SSSR)

Card 2/3

ACCESSION NR: AT4008633

SUBMITTED: 00

DATE ACQ: 20Dec63

ENCL: 00

SUB CODE: LS

NO REF SOV: 012

OTHER: 012

Card 3/3

KALMANSON, A.E.

Use of a method of electron paramagnetic resonance in biochemistry.
Usp.biol.khim. 5:289-351 '63. (MIRA 17:3)

KALMANSON, A.E.; KHARITONENKOV, I.G.; CHETVERIKOV, A.G.;
~~ELYUMENFEL'D~~, L.A.

Vapor-flow technique in the investigation of electron spin
resonance spectra of free radicals under heterogeneous con-
ditions. Biofizika 8 no.6:722-727 '63. (MIRA 17:7)

G.E. FRIKOV, A.G.; KALMANSON, A.E.; PHANITONENKOV, I.G.;
BRYDMENEL'D, L.A.

Study of free radicals in biological objects generated
during the course of enzymatic reactions by the electron
paramagnetic resonance method. Biofizika 9 no. 1:18-24
'64. (MIRA 17:7)

1. Institut khimicheskoy fiziki AN SSSR, Moskva.

ACCESSION NR: AP4022481

S/0217/64/009/002/0172/0179

AUTHOR: Kharitononkov, I. G.; Kalmanson, A. E.; Chetvarikov, A. G.; Blyumenfel'd, L. A.

TITLE: Vapor jet method of investigating the appearance and loss of heptaquinone free radicals in model biological oxidation systems

SOURCE: Biofizika, v. 9, no. 2, 1964, 172-179

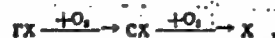
TOPIC TAGS: heptaquinone free radical, biological oxidation system, oxidation-reduction reaction, ethylgallate, n-benzoquinone, vicasol, methinone, rutin, quercetin, EPR spectroscopy, vapor jet EPR spectroscopy, EPR spectrum hyperfine structure, sorbed state, soluble state, free radical concentration, argon, oxygen, solvent vapor, amplitude signal, heptaquinone molecule, electron transfer mechanism

ABSTRACT: Ethylgallate, n-benzoquinone, vicasol (a water-soluble bisulfite vitamin K derivative), methinone (water insoluble vitamin K) and flavones (rutin and quercetin) were investigated by EPR spectroscopy to determine the nature of heptaquinone free radicals formed during oxidation-reduction reactions in biological systems.

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The substances were first analyzed by standard EPR spectroscopy methods and further analyzed by a vapor jet EPR spectroscopy method developed by the authors. The advantage of the vapor jet method is that free radicals adsorbed by different proteins can be studied over a wide range of time intervals and the ionization stage can be separated from the stage when free radicals appear. With this method the reaction of direct oxidation kinetics may be expressed as:



where RX - completely reduced (hydroquinone) form of investigated compound, CX - free radical (heptaquinone) form, and X - completely oxidized (quinone) form. For the vapor jet method, a solution of the investigated substance with 1 to 2% sodium alkoxide was placed on a paper filter in an inert gas atmosphere. Then the substance was dried with an argon jet or other gas jet and placed into an ampule for EPR spectroscopy. The absence of a hyperfine structure in the standard EPR spectra for substances analyzed in a sorbed state indicated that the radicals are rigidly bound to the base. EPR spectra for the same substances in a soluble state disclosed a hyperfine structure

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indicating the presence of highly mobile heptaquinone radicals. On the basis of these results, the effects of argon, oxygen, and nitrogen jets combined with various solvent vapors on heptaquinone free radical concentrations were investigated in the substances in varying sorbed and soluble states. Amplitude signals for the various effects are presented, but no conclusions are made. Experimental data shows that heptaquinone molecules sorbed on the polar bases can transfer an electron to one another if the medium has a sufficient number of protons capable of compensating for the charges that form. Possible mechanisms for this transfer are suggested. "The authors express their gratitude to their colleagues at the State Scientific-Research Institute of Vitaminology of the Ministry of Health USSR for the vicasol, methinone, rutin and quercetin preparations." Orig. art. has: 9 figures and 3 formulas.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR, Moskva (Institute of Chemical Physics AN SSSR)

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Author : Kalmanson, S.Ya., Aleksandrovskiy, V.A.

Inst : Molotov Agricultural Institute

Title : On the Significance of the Speed of Feed Consumption
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